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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/723,790	11/26/2003	Steven Lawrence Fors	134690IT/YOD GEMS:0239	9080
7590 Patrick S. Yoder FLETCHER YODER P.O. Box 692289 Houston, TX 77269-2289			EXAMINER MACKOWEY, ANTHONY M	
			ART UNIT 2624	PAPER NUMBER
			MAIL DATE 11/14/2008	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/723,790	Applicant(s) FORS ET AL.	
	Examiner ANTHONY MACKOWEY	Art Unit 2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 August 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 11-15,35-37 and 53-55 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 11-15,35-37 and 53-55 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

Applicant has amended claims 13 and 14, deleting "and" and adding "or", however the status of both claims is identified as Original. Examiner also notes the "or" added to claim 14 was not properly identified with underlined text.

Response to Arguments

Applicant's arguments filed August 29, 2008 have been fully considered but they are not persuasive.

Applicant has amended claims 53-55 to recite, "computer readable medium" which would overcome the rejection of claims 53-55 under 35 USC 101. However, the specification does not provide adequate written description to support such an amendment. Examiner is unable to find any recitation or illustration in the originally filed disclosure that would support the claimed "computer program [provided] on a computer readable medium" as recited in claims 53-55.

Applicant submits "Wang does not contemplate, much less teach, the processing of a digitized sheet of film having a number of discretely or separately acquired images" and therefore "could not read on the present claims in any case." Examiner respectfully disagrees with applicant's interpretation of the radiographic image disclosed by Wang. Wang clearly teaches "a CR image may consist of one or more sub-images if the radiologists choose to make multiple exposures, typically different projections of the same body part, on the same screen.

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Each sub-image corresponds to one x-ray irradiation field or one exposures" (col. 1, lines 60-65).

Figures 12(a)-(d) of Wang clearly illustrate an x-ray image with three different exposures of portions of a hand, each of varying size, position and orientation, which would have required discrete/separate exposure instances. The Wang reference is not deficient in its disclosure of "accessing a digitized sheet of film having a number of images, the sheet of film resulting from scanning of an analog sheet of film of the images, wherein the images are discretely (acquired from on another with a medical imaging modality" as recited in claims 11 and 53 and similarly required by claim 35.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 53-55 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claims 53-55, as amended recite a "computer program [provided] on a computer-readable medium". However, the specification does not provide adequate written description to support such an amendment. Examiner is unable to find any recitation or illustration in the originally filed disclosure that would support the claimed "computer program [provided] on a computer readable medium" as recited in claims 53-55.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 11-15, 35 and 53 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of US 6,212,291 to Wang et al. ("Wang") and US 4,847,694 to Nishihara.

Regarding claim 11, Wang discloses a method for separating digitized images on a digitized sheet of film (Fig. 10; col. 4, line 21 – col. 5, line 28), comprising:

accessing a digitized sheet of film having a number of images, the sheet of film resulting from scanning of an analog sheet of film of the images, wherein the images are discretely acquired from on another with a medical imaging modality (Figs. 1A-B and 12A-D; col. 4, lines 25-26; col. 5, lines 29-45; col. 1, lines 60-65);

configuring a digital template based on the number of images (col. 4, lines 39 – col. 5, line 10, *collimation blades*); and

slicing the images on the digitized sheet by applying the digital template to the digitized sheet (col. 4, line 39 – col. 5, line 10, *collimation blades are used to partition the digitized sheet into sub-images*).

Wang is silent with regard to collating the digitized images to provide digitized images corresponding to the number of images on the analog sheet of film. However, Nishihara

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discloses a picture archiving and communication system which performs collation of image data (col. 3, line 65 – col. 4, line 1; col. 5, lines 21-46).

Wang and Nishihara are combinable because they are both in the field of medical image processing. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Wang and Nishihara such that the method of Wang could be implemented in a PACs system such as that disclosed by Nishihara and the method is modified to include collating the each of the sliced sub-images to provide collated digitized images corresponding to the number of images on the analog sheet of film, in order to store the [sub-] images in a database for further retrieval, processing and/or analysis and enable a database to control both image data which is mistakenly supplied to it and image data which it should receive but has not yet reached it (Nishihara, col. 2, lines 5-9).

Regarding claim 12, Wang further discloses the digital template is configured and applied with a computer algorithm (col. 5, lines 46-55).

Regarding claim 13, the combination of Wang and Nishihara further discloses at least one of storing the collated digitized images (Nishihara, col. 4, lines 1-2), ordering the collated digitized images, displaying the collated digitized images in stack mode or cine mode, displaying the collated digitized images on a PACS workstation monitor (Wang, col. 5, lines 44-45), displaying the collated digitized images in combination with a DICOM header defining a series and order of the collated digitized images, registering the collated digitized images (Nishihara, col. 2, line 65 – col. 4, line 2), comparing the collated digitized images with digital images, or

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registering the collated digitized images with digital images.

Regarding claim 14, Wang further discloses the original image data of the digitized images reproduced on the sheet of film is acquired with at least one of a magnetic resonance imaging (MRI) system, a computed tomography (CT) imaging, or an X-ray imaging system (col. 6, lines 13-16).

Regarding claim 15, Wang further discloses the digitized sheet is stored after the sheet of film is scanned to generate the digitized sheet (col. 5, lines 30-42).

Regarding claim 35, Wang discloses a system for separating digitized images within an image file of a digitized sheet of film (Fig. 9; col. 5, line 29 – col. 6, line 16), comprising:

means for accessing a digitized sheet of film having a number of digitized images, the sheet of film resulting from scanning of an analog sheet of film reproduced from images separately acquired with a medical imaging modality (Figs. 1A-B, 9 and 12A-D; col. 4, lines 25-26; col. 5, line 29 – col. 6, line 16; col. 1, lines 60-65);

means for slicing the digitized images with a digital template (Fig. 9; col. 4, lines 39 – col. 5, line 10; col. 5, line 29- col. 6, line 16, *image processor, collimation blades*);

means for storing the digitized images (Fig. 9; col. 5, lines 29-42, *memory*); and

wherein the images are originally reproduced on the analog sheet of film from image data acquired with at least one of a magnetic resonance imaging (MRI) system, a computed tomography (CT) imaging, or an X-ray imaging system (col. 5, lines 30-42; col. 6, lines 13-16).

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Wang is silent with regard to collating the digitized images. However, Nishihara discloses a picture archiving and communication system (PACS) which performs collation of image data (col. 3, line 65 – col. 4, line 1; col. 5, lines 21-46).

Wang and Nishihara are combinable because they are both in the field of medical image processing. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Wang and Nishihara such that the system of Wang could be implemented in a PACS system such as that disclosed by Nishihara and is modified to include collating the digitized images as disclosed by Nishihara in order to store the digitized images in a database for further retrieval, processing and/or analysis and enable a database to control both image data which is mistakenly supplied to it and image data which it should receive but has not yet reached it (Nishihara, col. 2, lines 5-9).

Regarding claim 53, Wang discloses a computer program, provided on a computer-readable medium, for separating digitized images within an image file of a digitized sheet of film (Figs. 10 and 13; col. 4, line 21 – col. 5, line 28; col. 5, line 46 – col. 6, line 13), comprising:

a routine for accessing a digitized sheet of film having a number of digitized images, the sheet of film resulting from scanning of an analog sheet of film reproduced from image data acquired with a medical imaging modality, wherein the images are discretely acquired (Figs. 1A-B and 12A-D; col. 4, lines 25-26; col. 5, lines 29-45; col. 1, lines 60-65);

a routine for slicing the digitized images with a digital template (col. 4, line 39 – col. 5, line 10, *collimation blades are used to partition the digitized sheet into sub-images*);

a routine for storing the digitized images (col. 5, line 28 - col. 6, line 13); and

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wherein the images are originally reproduced on the analog sheet of film from image data acquired with at least one of a magnetic resonance imaging (MRI) system, a computed tomography (CT) imaging, and an X-ray imaging system (col. 5, lines 30-42; col. 6, lines 13-16).

Wang is silent with regard to collating the digitized images. However, Nishihara discloses a picture archiving and communication system which performs collation of image data (col. 3, line 65 – col. 4, line 1; col. 5, lines 21-46).

Wang and Nishihara are combinable because they are both in the field of medical image processing. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Wang and Nishihara such that the method of Wang could be implemented in a PACs system such as that disclosed by Nishihara and the method is modified to include collating the digitized images as disclosed by Nishihara in order to store the digitized images in a database for further retrieval, processing and/or analysis and enable a database to control both image data which is mistakenly supplied to it and image data which it should receive but has not yet reached it (Nishihara, col. 2, lines 5-9).

Claims 36, 37, 54 and 55 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Wang and Nishihara as applied to claims 35 and 53 above, and further in view of US 6,947,584 to Avila et al. (“Avila”).

Regarding claims 36, 37, 54 and 55, While Wang discloses the digitized images may be obtained from CT or MRI imaging (col. 6, lines 13-16) and displaying processed images (col. 5, lines 44-45), Wang and Nishihara are silent with regard to ordering the collated digitized images

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and displaying the collated digitized images on a PACS workstation monitor in stack mode or cine mode. However, Avila discloses a volume imaging system which orders the digitized images and displays digitized images in stack mode or cine mode (col. 4, lines 46-48; col. 4, line 65 – col. 5, line 19; col. 7, lines 32-36; col. 8, lines 22-40; col. 9, lines 8-59).

Wang, Nishihara and Avila are combinable because they are all in the field of medical image processing. It would have been obvious to one of ordinary to combine Wang Nishihara and Avila such that the combination of Wang and Nishihara, as described above, is modified to include ordering the collated digitized images and displaying the collated digitized images on a PACS workstation monitor in stack mode or cine mode as disclosed by Avila in order to enable an operator to measure and visualize a three dimensional volumetric data set (Avila, col. 3, lines 5-9).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US 6,427,058 and US 6,559,967 both to Akiba et al. are cited for teaching 1 to N image processing and reproduction (1 sheet having N image is converted to N sheets having 1 image).

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANTHONY MACKOWEY whose telephone number is (571)272-7425. The examiner can normally be reached on M-F 9:00-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Bella can be reached on (571) 272-7778. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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/Matthew C Bella/

Supervisory Patent Examiner, Art Unit
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